



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 10/575,992 Confirmation No. 8902
Applicant (s) : Robert E. Hefner Jr.
Filed : April 17, 2006
TC/A.U. : Unknown
Examiner : Unknown
Title : MULTIFUNCTIONAL MONOMERS CONTAINING BOUND
MESOGENIC PORAGEN FORMING MOIETIES AND
POLYARYLENE COMPOSITIONS THEREFROM
Docket No. : 62927A
Customer No. : 00109

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Commissioner for Patents
P.O. Box 1450
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Sir:

INFORMATION DISCLOSURE STATEMENT

Pursuant to Applicant's duty of disclosure under 37 CFR §1.56, the Examiner's attention is directed to the information identified in the attached Form PTO/SB/08a.

The cited U.S. patents and patent application publications are listed on Form PTO/SB/08a. A copy of the cited foreign patent documents and non-patent literature are enclosed herewith. The Examiner is requested to review each reference and formulate his/her own understanding thereof.

This Statement is being submitted before the mailing date of the first Office Action on the merits. Under 37 C.F.R. §1.97(b)(3), submission of this Statement requires no fee. If this is incorrect, please charge any fees required to Deposit Account No. 04-1512.

Respectfully submitted,

Susan Moeller Zerull

Susan Moeller Zerull
Registration No. 38,367
Phone: (989) 636-8858

P. O. Box 1967
Midland, MI 48641-1967
SMZ/jmd

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Complete if Known

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First Named Inventor	Robert E. Hefner Jr.
Art Unit	Not Assigned
Examiner Name	Not Assigned
Attorney Docket Number	62927A

Sheet 4 of 4

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. 1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
		WIESLER, U.-M., A. J. Berresheim, F. Morgenroth, G. Lieser, and K. Müllen, "Divergent Synthesis of Polyphenylene Dendrimers: The Role of Core and Branching Reagents upn Size and Shape", Macromolecules, 2001, pages 187-199, Volume 34, No. 2.	
		Zhong, Ben et al., "Porous ultra low-k dielectrics having ultra small pores", Abstracts of Papers, 224 th ACS National Meeting, Boston, MA, August 18-22, 2002, Published by the American Chemical Society	
		CHEMICAL ABSTRACT 2001:404713	<input type="checkbox"/>
		CHEMICAL ABSTRACT 2003:570956	<input type="checkbox"/>
		CHEMICAL ABSTRACT 2002:566264	<input type="checkbox"/>
		CHEMICAL ABSTRACT 2000:133674	<input type="checkbox"/>
		CHEMICAL ABSTRACT 1999:184247	<input type="checkbox"/>
		CIFERRI, Albert ed., <u>Liquid Crystallinity in Polymers: Principles and Fundamental Properties</u> , Chapter 8. Liquid-Crystalline Sidechain Polymers. H. Finkelmann, pp. 315-340 (1991)	<input type="checkbox"/>
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¹ Applicant's unique citation designation number (option). ² Applicant is to place a check mark here in English language Translation is attached. This collection of information is required 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P. O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450.

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		BAKER, G. L. and J. K. Stille, "Hexaarylbenzene Units as Cross-Linking Sites for Polyquinolines", <i>Macromolecules</i> , 1979, pages 369-373, Volume 12, No. 3.	<input type="checkbox"/>
		BRAHAM, J. N., T. Hodgins, T. Katto, R. T. Kohl, and J. K. Stille, "Polyphenylenes via Bis(2-pyrones) and Diethynylbenzenes. The Effect of m- and p- Phenylene Unites in the Chain", <i>Macromolecules</i> , 1978, pages 343-346, Volume 11, No. 2.	<input type="checkbox"/>
		CAPEK, Ignac and Jakub Chudej, "On the fine emulsion polymerization of styrene with non-ionic emulsifier," <i>Polymer Bulletin</i> , Vol. 1999, 43, pp. 417-424	<input type="checkbox"/>
		DONESCU et al., "The Influence of Monomers upon Microemulsions with Short Chain Cosurfactant," <i>J. Dispersion Science and Technology</i> , Vol. 22, Nos. 2&3, pp. 231-244, 2001.	<input type="checkbox"/>
		FELDMAN, Ken S., Robert E. Ruckle, Jr., Susan M. Ensel and Paul H. Weinreb, "Synthesis of a Chiral Binaphthylsulfide: A Potentially Useful Reagent for Catalytic Asymmetric Synthesis", <i>Tetrahedron</i> , 1992, pages 7101-7102, Volume 33, No. 47.	<input type="checkbox"/>
		GUTSCHE et al., "Calixarenes. 6. Synthesis of a Functionalizable Calix[4]arene in a Conformationally Rigid Cone Conformation," <i>J. Am. Chem. Soc.</i> , Vol. 104, pp. 2652-2653 (1982)	
		KRAFT, Arno et al., "Supramolecular liquid crystals with columnar mesophases through self-assembly of carboxylic acids around a tribasic core," <i>Chem. Comm</i> , pp. 1015-1016 (2000)	
		KUMAR, Uday and Thomas X. Neenan, "Diels-Alder Polymerization between Bis(cyclopentadienones) and Acetylenes. A Versatile Route to New Highly Aromatic Polymers", <i>Macromolecules</i> , 1995, pages 124-130, Volume 28, No. 1.	<input type="checkbox"/>
		LARPENT, C. and T. F. Tadros, "Preparation of microlatex dispersions using oil-in-water microemulsions", <i>Colloid Polmer Science</i> , 1991, pages 1171-1183, Volume 269, No. 11.	<input type="checkbox"/>
		LEE, Hyung-Kun et al., "Synthesis of a Nanoporous Polymer with Hexagonal Channels from Supramolecular Discotic Liquid Crystals," <i>Angew. Chem. Int. Ed.</i> , Vol. 40, No. 14, pp. 2669-2671 (2001)	
		LIU, Zhi, and Jerrold Meinwald, "5-(Trimethylstannyl)-2H-pyran-2-one and 3-(Trimethylstannyl)-2H-pyran-2-one: New 2H-Pyran-2-one Synthons", <i>J. Org. Chem.</i> , 1996, pages 6693-6699, Volume 61, No. 19.	<input type="checkbox"/>
		MCDONALD et al., "Diels-Alder Reactivity of Oxygenated Dienes and Furans. Synthesis of Oxygenated Bipheynyls," <i>J. Chem. Soc. Perk. Trans.</i> , Vol. 1, pp. 1893-1900, 1979.	<input type="checkbox"/>
		OGLIARUSO, Michael A. and Ernest I. Becker, "Bistetracyclones and Bis-hexaphenylbenzenes. II", <i>J. Org. Chem.</i> , 1965, pages 3354-3360, Volume 30.	<input type="checkbox"/>
		OGLIARUSO, Michael A., Lewis A. Shadoff and Ernest I. Becker, "Bistetracyclones and Bis-hexaphenylbenzenes", <i>J. Org. Chem.</i> , 1963, pages 2725-2728, Volume 28.	<input type="checkbox"/>
		PUETTER et al., <i>J. Prakt. Chem.</i> , 1951, Vol. 149, pp. 183-216	<input type="checkbox"/>
		SCHILLING, Jr., Curtis L., Joe A. Reed, and J. K. Stille, "Diels-Alder Polymerizations. VI. Phenylated Polyphenylenes from Bis-2-pyrones and p-Diethynylbenzene", <i>Macromolecules</i> , 1969, pages, 85-88, Volume 2, No. 1.	<input type="checkbox"/>
		TONG, Ling, Douglas M. Ho, Nancy J. Vogelaar, Clarence E. Schutt, and Robert A. Pascal, Jr., "The Albatrossenes: Large, Cleft-Containing, Polyphenyl Polycyclic Aromatic Hydrocarbons", <i>J. Am. Chem. Soc.</i> , 1997, pages 7291-7302, Volume 119, No. 31.	<input type="checkbox"/>
		TURCHI, Stefania, Fodolfo Nesi, and Donatella Giomi, "Reactions of 4,5-Dicyanopyridazine with Alkynes and Enamines: a New Straightforward Complementary Route to 4-Mono- and 4,5-Disubstituted Phthalonitriles", <i>Tetrahedron</i> , 1998, pages 1809-1816, Volume 54.	<input type="checkbox"/>
		VANKERCKHOVEN, Henk F., Yvan K. Gilliams, and J. K. Stille, "Poly(p-phenylene). The Reaction of 5,5'-p-Phenylenebis-2-pyrone with p-Diethynylbenzene", <i>Macromolecules</i> , pages 541-546, Volume 5, No. 5.	<input type="checkbox"/>
		H. WARSON, <i>The Applications of Synthetic Resin Emulsions</i> , 1972, p. 88	<input type="checkbox"/>

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Attorney Docket Number	62927A

Sheet	2	of	4
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FOREIGN PATENT DOCUMENTS

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U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date (MM-DD-YYYY)	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US-4,400,540	08-23-1983	Bruce A. Reinhardt, et al.	
		US-5,189,117	02-23-1993	Robert E. Hefner Jr.	
		US-5,270,406	12-14-1993	Jimmy D. Earls et al.	
		US-5,637,669	06-10-1997	Robert E. Hefner Jr. et al.	
		US-5,965,679	10-12-1999	James P. Godschalx, et al.	
		US-6,156,812	12-05-2000	Kreisler Lau, et al.	
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		US-6,359,091 B1	03-19-2002	James P. Godschalx, et al.	
		US-6,653,358 B2	11-25-2003	Kenneth J. Bruza, et al.	
		US-6,887,910 B2	05-03-2005	Kenneth J. Bruza, et al.	
		US-2003/0027970 A1	02-06-2003	Roland Haasmann et al.	
		US-2003/0083392 A1	05-01-2003	Kenneth J. Bruza et al.	
		US-2003/0165625 A1	09-04-2003	Ying Hung So, et al.	
		US-2004/0053033 A1	03-18-2004	Q. Jason Niu, et al.	
		US-2004/0054111 A1	03-18-2004	Thomas H. Kalantar	
		US-2005/0014855 A1	01-20-2005	Kenneth J. Bruza	
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